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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,898	01/17/2002	Hegeon Kwun	090936.0445	1790
31625	7590	08/26/2004	EXAMINER	
BAKER BOTTS L.L.P. PATENT DEPARTMENT 98 SAN JACINTO BLVD., SUITE 1500 AUSTIN, TX 78701-4039			FAYYAZ, NASHMIYA SAQIB	
			ART UNIT	PAPER NUMBER
			2856	

DATE MAILED: 08/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/051,898

Applicant(s)

KWUN ET AL.

Examiner

Nashmiya S. Fayyaz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. Claims 1-21 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Spisak et al US patent # 5, 591, 912.

As to claims 1-21, Spisak et al disclose a method and apparatus for ultrasonic inspection of a conduit including directing a first ultrasonic "long range wave" at the conduit and receiving a reflection data set, and directing a second "long range wave" and receiving a second reflection "data set", from the inside and sound travels inward (i.e. the "same direction" or in the direction of area A see col. 3, lines 47-52) and comparing the received sounds (23/23') which include sounds such as from an irregularity C or deposit (24/24'), (35/35') plotting the reflected sounds versus time and laying them over one another to determine overlap i.e. time-shifting and determining coincidence where overlap would be indicative of a defect, see col.4, lines 21 et seq. Further, it is noted that Spisak et al. fail to disclose usage of a "long range wave" or detection of "peak" signals. However, it is noted that "long range" is a relative term with no range provided in the claims. Therefore, specification of the pulses disclosed by Spisak et al. as "long range" would have been a matter of design choice as a relative term based on the size of the conduit being evaluated and the pulses have not been distinguished as of different modes or orders which would indicate that the two probes would produce the same wave mode and order, as well. As to detecting of peak signals, it is well-known in the art of ultrasonic that peaks represent a signal response

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as the received wave will have many components and the peak is generally termed the "reflected sound" as indicated by Spisak et al. Furthermore, it is noted that Spisak lacks a specification of the exact time shift time. However it is noted that Spisak et al. indicate the possibility of having the transceivers as not positioned equidistant and it is possible to time shift the signals to create overlap. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have determined the appropriate shift time to create the appropriate overlap necessary to detect a flow.

As to claims 3 and 14, see col. 6, lines 14-20. As to claims 4-5 and 15-16, usage of the frequency domain as an alternative to the time domain is old and well-known in the art of ultrasonics. Therefore, it would have been obvious to one of ordinary skill in the art of ultrasonics at the time of the invention to have employed the frequency domain as an equivalent alternative to the time domain as a matter of design choice known in the art. As to claims 6 -7 and 17-18, note the establishment of a "baseline" in the reflected sound plots. As to claims 9 and 20, Spisak et al. refer to "data processing" to enhance distinction between noise and reflected sounds produced by defects which is known to be accomplished via thresholds. As to claims 10 and 21, the type of probe is not disclosed as "magnetostrictive". However, magnetostrictive transducers is considered to have been a matter of design choice obvious to one of ordinary skill in the art at the time of the invention.

2. Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spisak et al as applied to claims 1-21 above, and further in view of Burnett- U.S. Patent # 6,065,348. As to claims 22 and 23, Spisak et al employ transducers on the

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inside of the pipe rather than externally. In a related prior art device, Burnett also discloses corrosion detection in pipelines by applying pulses externally via antennas 20 and 22 in order to detect damage via comparison of the pulse curves produced.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have employed either external or internal sensors, as a matter of design choice in order to investigate the state of the pipeline damage based on the convenience of transducer placement as well as access availability.

3. Applicant's arguments filed 5/21/04 have been fully considered but they are not persuasive. Applicant has argued that Spisak et al do not provide waves that travel "in a single direction" and that the single direction is "the direction of the two waves relative to each other". Such arguments are not found persuasive because the waves in Spisak do travel in a "single direction" i.e. the direction towards area A and it is noted that the "single direction" has not been defined in the claim language as "relative to each other".

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nashmiya S. Fayyaz whose telephone number is 571-272-2192. The examiner can normally be reached on Mondays and Thursdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron E. Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


NFayyaz
Examiner
Art Unit 2856


HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

nf
8/23/04